

## Green Energy Biomass Furnace at Sawmill Plant Relies On Precision Thermal Mass Flow Meter

### *Accurate Combustion Air Flow Measurement for Combined Heating & Power (CHP)*

**San Marcos, CA** — One of Ireland's largest manufacturers of sawn softwood products now relies on the highly accurate [ST80 Series Thermal Mass Flow Meter](#) from [Fluid Components International \(FCI\)](#) to help control the primary air flow feed to its advanced biomass furnace providing renewable energy from its combined heat and power (CHP) system.

CHP system technology produces green renewable electricity and thermal energy at high efficiencies using a range of technologies and fuels. With industrial on-site power production, losses are minimized and heat that would otherwise be wasted is applied to facility loads in the form of process heating, steam, hot water, or even chilled water.

This timber manufacturer operates two of Ireland's largest sawmills. The company utilizes 100 percent of each log in creating multiple wood products, such as sawdust, woodchip and bark. Woodchip is used in the manufacture of medium-density fiberboard (MDF) lumber and paper. Sawdust is used in the manufacture of chipboard. Bark is produced for use as garden mulch. Woodchip and sawdust are also used as animal bedding.

The company recognized CHP biomass systems as a crucial component of the global clean energy initiative. Timber is a biomass system fuel, which can be utilized efficiently in producing green renewable energy. This sawmill site now operates an award winning renewable biomass CHP system, which depends on the continuous accurate monitoring and control of air flow to its biomass furnace, which supports electric energy and heat production.

FCI's ST80 Thermal Air/Gas Mass Flow Meter was chosen by the sawmill team responsible for the biomass furnace to ensure the unit's primary air feed lines operated smoothly. The team was impressed with the ST80 Flow Meter's repeatable accuracy and ease of installation with a single-point retractable insertion compression fitting. This meter's design configuration allowed the probe to be positioned within the duct for accurate and repeatable air flow readings.



The sawmill plant team also appreciated that the ST80 Flow Meter features SIL compliance and a three point in-situ calibration check of the electronics, without removing the sensor from the duct, allowing the periodic testing of the instrument electronics. The ST80 Flow Meter indicates flow rate, totalized flow along with temperature and has various industry standard communications output protocol options to connect to existing site systems.

FCI's ST80 Flow Meter is a high performance, rugged thermal dispersion technology air/gas flow meter that combines ultra-reliable, feature-rich electronics, and FCI innovations such as Adaptive Sensing Technology™ (AST™) with the industry's most extensive selection of application-matched flow sensors, including FCI's patented "FPC" sensor for compressed air and new "wet gas" flow element, to provide a truly superior solution for industrial processes and plant applications. Furthermore, the ST80 meter combines these features with a robust, rugged transmitter enclosure and industry's broadest selection of process connections to provide longest service life and ease-of-installation in your installation's pipe or duct.

The ST80 Series transmitter's outputs are a match to popular DCS, PLC, SCADA, recorder, or alarm systems. Whether a user's output needs are traditional 4-20 mA analog or advanced digital bus communications such as HART, Foundation Fieldbus, PROFIBUS PA, PROFIBUS DP, or Modbus, the ST80 has them all covered. Then for local display, the ST80's graphical, backlit LCD is unmatched in showing what's happening in the pipe. Flow rate, totalized flow, and temperature are continuously displayed in both a digital and bar graph presentation, while alarms and/or diagnostic messages will display as needed to alert operators.

The insertion configuration ST80 Series meter chosen for the sawmill biomass furnace operates over a wide flow range from 0,07 to 305 NMPS (0.25 to 1000 SFPS). Flow accuracy is  $\pm 1.0\%$  reading,  $\pm 0.5\%$  full scale, with repeatability of  $\pm 0.5\%$  of reading. The turndown range is normally factory set and field adjustable from 2:1 to 100:1 within calibrated flow range. It operates over a wide temperature range: up to 454°C (850°F). Global approvals available for demanding process environments include ATEX, IECEx, FM/FMc, UKEX, EAC/TR CU, NEPSI, EMSA EQM-Ex, CE Mark, UKCA, CPA, CRN, ANSI and more.

FCI solves flow and measurement applications with advanced thermal dispersion technologies. With almost 60 years' experience and the largest installed base of thermal flow meters, flow switches and level switches, you can count on FCI to know your application and have the right solutions.